NORTHERN REGION

ENVIRONMENTAL MONITOR

Spring 2000 U. S. Army Northern Regional Environmental Office

Biodiesel Fuel Credits Can Help Installations Meet Alternative Fuel Vehicle Requirements

By Mitch Bryman
NREO Environmental Specialist

A cleaner diesel fuel made from renewable oils can now help Department of Defense fleet managers who must buy alternative fuel vehicles to comply with federal energy regulations.

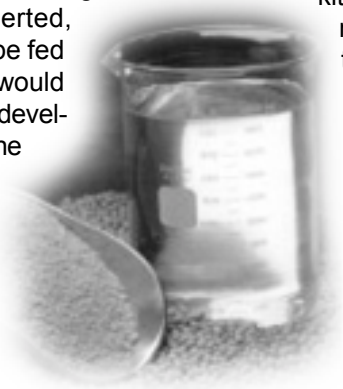
A recent change to the Energy Policy Act of 1992 (EPACT) lets federal agencies use biodiesel fuel credits to meet up to 50 percent of their alternative fuel vehicle purchase requirements.

These credits are available to those federal fleets required by EPACT to include a certain percent of alternative fuel vehicles when buying new vehicles. These requirements are set forth in Executive Order 13031 — Federal Alternative Fueled Vehicle Leadership, and apply to many nontactical vehicle fleets in urban areas. Affected DoD fleet managers can take advantage of biodiesel fuel credits rather than purchasing alternative fuel vehicles.

What is Biodiesel Fuel?

Rudolf Diesel stunned scientists at the 1900 World's Fair when he used peanut oil to fuel his newly disclosed engine.

In 1911, Diesel asserted, "the diesel engine can be fed with vegetable oils and would help considerably in the development of agriculture of the countries which use it."



After Diesel's death in 1913, the idea of using vegetable oil to fuel engines became obsolete. Scientists and engineers focused on petroleum, which was cheaper and more abundant. It wasn't until the oil crisis of the 1970s that vegetable oil engine fuel was again given serious attention.

The idea of running diesel engines on vegetable oil has evolved since Rudolf Diesel's day. Modern biodiesel fuel more closely resembles petroleum diesel than kitchen oil — though it can be made from waste from a restaurant deep fryer.

Biodiesel is easily produced through a process known as "transesterification." The process combines fats or oils from plants, animals and/or microalgae with alcohol in the presence of a catalyst to form fatty esters. In the first recovery phase the product is

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Layaway Economic Analysis (LEA) Software Tool Enhances Cultural Resource Programs

By Caroline Hall
USAEC Historian

Edited by Melanie Graham
Contributing Writer/Editor

The Department of the Army's historic building management responsibility is immense; there are more than 12,000 buildings that are historically significant and over 40,000 that are over 50 years old. In addition, the Army facilities database indicates that approximately 73,000 Army buildings will become 50 years old within the next 30 years.

The expense of keeping underused facilities in the inventory places tremendous strains on operations and maintenance budgets that have been steadily decreasing in recent years. Army building managers must make cost effective decisions about the use, maintenance or demolition of these buildings and comply with the National Historic Preservation Act (NHPA).

To address this challenge, the U.S. Army Environmental Center (USAEC), in conjunction with the U.S. Army Construction Engineering Research Laboratory (USCERL), developed the Layaway Economic Analysis (LEA) software for use by historic property managers, environmental staff, public works staff and others involved in the management of the Army's real property. This easy-to-use tool is an interactive software program that provides life-cycle cost estimates for three primary methods used to handle excess facilities — renovate/reuse, layaway/reactivate and deactivate/demolish.

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In This Issue

From the Chief

By Bill Herb
NREO Chief

Here on the shore of the Chesapeake Bay, spring is in the air and winter is only a memory. Unlike the black bears in the NREO area and the crabs in the Bay, environmental issues did not hibernate. There have been some interesting changes and developments since we published the last issue of the *NREO Monitor*.

The Office of Director of Environmental Programs for the Army has a new Director. COL Stacey Hirata moved up from the Deputy position when COL Freeman departed. The Technical Director at the Army Environmental Center (AEC), Dr. Ken Juris, is currently in the midst of a stint as a Congressional Fellow in the office of Senator Bob Graham of Florida, and Dave Guzewich, Chief of the AEC Environmental Quality Division, is acting as Technical Director.

Things have been happening in the U.S. Environmental Protection Agency as well. John DeVillars has stepped down as the Regional Administrator for EPA Region I, and Mindy Lubber, the Acting RA since January, has been permanently appointed to the RA post. [See related article on page 3 of this issue.] As reported in the previous issue of the *Monitor*, Bradley M. Campbell has succeeded W. Michael McCabe as the Region III Administrator. Region V has a new administrator in the person of Francis Lyons.

NREO staff have not been sleeping away the winter in the depths of the Bay with the crabs. We have stepped up our efforts to monitor legislation and regulations that are being developed at the state level within our area of responsibility that might have significant effects on DoD or the Army. As you can imagine, doing this for 20 states and two territories is quite a task. I can hear the crabbing (just couldn't pass that one up) from the Army RECs (even from the one in Chicago) every two weeks when they receive the latest information to review. Because each Service gets a similar report, we spend a good bit of our time and effort looking for Army-specific issues. We have also taken the time to develop or write the accompanying articles in this issue of the *NREO Monitor*.

The Army Regional Environmental Coordinators have been tasked with assisting in the Army-wide effort to reduce enforcement actions and help ensure that the Army is reporting enforcement actions in the same way as the other services. The RECs particularly have been tasked to monitor and offer assistance on actions that have been open for more than six months.

Needless to say, regulators have not been dozing in the mud either. Even though the Army has been taking steps to reduce new and open enforcement actions, it still gets new ones and retains old ones on the books. The Army has a number of tools to assess its compliance with environmental requirements, including Environmental Compliance Assessment System audits, the Installation Status Report (Environment) and other annual internal assessments.

The Army continues to receive enforcement actions, however, for practices identified as deficient during these assessments. According to Army sources, many of these enforcement actions stem from failure to file required reports on time and other administrative issues, rather than from practices that pose notable health or safety hazards.

The Army was assessed about $329,000 in fines as of the first half of fiscal 1999, compared to some $1.9

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Northern Regional Environmental Monitor

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Our Mission: *The NREO was established in 1995 to support the Army and DoD mission through coordination, communication and facilitation of regional environmental activities. The Army REOs are part of a DoD network in which the Army, Navy and Air Force each has lead responsibility for mission implementation in the federal regions. The NREO has DoD lead responsibility for Region V, and Army lead responsibility for Regions I, II, III and V.*

EPA Names New Regional Administrator for Region I

By Bob Muhly
Army Region I/II REC

On March 15, 2000, Ms. Mindy Lubber was appointed as the Regional Administrator for the U.S. Environmental Protection Agency (USEPA) Region I office in Boston. Ms. Lubber had been the acting Regional Administrator since January of this year, following John DeVillars' resignation from the region's top job.

Ms. Lubber joined the USEPA Region I office in 1995 as Senior Policy Advisor to the Regional Administrator, and became the Deputy Regional Administrator in 1997. Prior to her Region I service, Ms. Lubber had been the president and Chief Executive Officer of Green Century Capital Management, an investment firm which invests in environmentally responsible companies, and then donates its net revenues to the support of environmental advocacy. Previously, Ms. Lubber was a Senior Advisor to the Governor in the Michael Dukakis administration. She also served as the consumer and environmental representative of the Massachusetts Energy Facilities Siting Council, and as the Chairwoman of the Board of Directors of the Massachusetts Public Interest Research Group. Ms. Lubber holds both Bachelor's and Master's Degrees in Business Administration, as well as a Law Degree. She is a member of the Massachusetts Bar.

In an open letter to the "people of New England," Ms. Lubber stated that the change in leadership of the regional office would not mean a change in course. She cited the "proven environmental results" achieved during the past six years, and stated her intent to seek ways to innovate and build on those successes. "We know what has worked well and what has worked less well, and will respond accordingly," she stated.

The letter set out three goals for the upcoming year:

- ***Achieving Environmental Results***
- ***Building Innovation Into EPA's Core Programs***
- ***Improving Accountability to Themselves and to Their Customers***

To achieve the "Environmental Results" goal, Region I will focus its efforts toward:

- **Protecting New England's Landscape** through efforts to prevent further loss of precious resources and recover those that have deteriorated
- **Protecting Drinking Water Supplies** by increasing the number of systems in New England that fully comply with the Safe Drinking Water Act
- **Achieving the Ozone Standard** by placing a high priority on efforts to reduce smog and by working with states in standards implementation and non-attainment designations
- **Protecting Surface Waters and Reducing the NPDES Permit Backlog** by committing to reduce the backlog of EPA-issued permits through the watershed approach, reflecting sound science and incorporating new water quality standards
- **Reducing Air Toxics** by placing a high priority on working with states to improve toxics monitoring and develop more sophisticated inventories of toxics emissions
- **Furthering the Children's Initiative** by continuing to recognize that children are typically more vulnerable to environmental risks than adults, and employing that fact in abatement programs
- **Measuring Environmental Results** through strong science and continued reliance on expert professional services (i.e., new and efficient laboratory monitoring and analysis)

Ms. Lubber's stated objectives in reaching the goal of "Building Innovation Into EPA's Core Programs" are:

- **Smart, Targeted Enforcement** through aggressive use of civil and criminal enforcement authority to deter violations and ensure environmental results
- **Assistance and Pollution Prevention** through empowering regulated entities to reduce the amount of pollution they generate, improving public access to chemical and environmental information, and encouraging innovative environmental technologies
- **Site Restoration and Revitalization** through working to reinvent the Superfund and RCRA Corrective Action programs, completing construction at more sites, and putting those sites back into productive use
- **Livable Communities** through making New England urban areas more livable and safer from a public health perspective, combating sprawl without stifling economic development, and enabling rural areas to protect important habitat and open space
- **Use of Market-Based Incentives** through employing pollutant and emissions trading programs to achieve cost-effective environmental benefits

Objectives described by Ms. Lubber for reaching the goal of "Improving Accountability to Themselves and to Their Customers" are:

- **Stronger External Communications** by engaging the public as much as possible through effective communication, expanded use of the Internet, and enhancement of the public's right-to-know about pollution
- **Diversity** by striving toward a diverse, tolerant workforce that better serves the public
- **Improved Customer Service** through easily accessible, friendly, and responsive service
- **Partnerships** through working relationships with other agencies, tribal governments, businesses, and environmental communities that facilitate identification and implementation of innovative solutions and encourage more cooperative and less adversarial relationships.

Ms. Lubber concluded her letter by stating her belief that the goals and objectives, while ambitious, are achievable if the Region I staff "maintain the high energy, hard work, and sense of urgency" that have characterized the region's efforts for the past several years.

U.S. EPA Unveils the PBT Profiler

By Hugh McAlear
Army Region V REC

The winter meeting of the Great Lakes Regional Pollution Prevention Roundtable in Chicago, March 1-2, 2000, featured a presentation by U.S. EPA staff on the PBT Profiler. The PBT Profiler is a screening tool to help stakeholders (particularly chemical companies) make choices among candidate options for new chemical products — before they market them — based on persistence, bioconcentration and toxicity characteristics.

There are approximately 80,000 different chemicals in commerce, with another 2000 new chemicals introduced each year. For chemicals falling within the two categories of pesticides and drugs, the manufacturer or marketer must conduct studies prior to introduction to satisfy regulatory agencies that the product is efficacious for its intended purpose and that the environmental impacts are known. For the vast majority of the remaining chemicals, however, no such requirement exists for pre-testing, and the onus falls on EPA to alert the public and try to weed out bad actors.

The PBT Profiler is a user-friendly, internet tool that estimates the persistence, bioconcentration and fish chronic toxicity of discrete organic chemicals. When actual data is lacking for a new chemical, the Profiler uses like chemical structures to predict the PBT characteristics. It then compares the results to EPA's regulatory criteria for PBT-related action under the Toxic Release Inventory (TRI) and Toxic Substances Control Act (TSCA) New Chemical Programs.

Chemicals are considered potential PBTs if: persistence in water, sediment, or soil exceeds two months (TRI > 2 days in air) AND 2) the bioconcentration factor (BCF) exceeds 1000. Based on the regulatory rules governing new chemicals, the results of the PBT Profiler can give an indication if the proposed chemical will fall within the EPA "ban pending actual testing" category and the reporting threshold for TRI purposes. Such screening information allows a chemical manufacturer, for example, to determine if it wants to continue pursuing a certain chemical when there may be an option with more favorable PBT characteristics.

The PBT Profiler is not applicable for all chemicals. EPA estimates that slightly more than 60 percent of the 80,000 chemicals on the TSCA inventory can be profiled using the PBT Profiler. Those that can be profiled tend to be discrete organics and simple organic salts. Chemicals for which the PBT Profiler is not applicable include inorganics, chemicals that hydrolyze rapidly, complex organic salts, organo metallic compounds, highly reactive compounds, chemicals with unknown or variable composition, and chemical mixtures.

The PBT Profiler has been Beta Tested in a number of locations across the country in an attempt to gauge industry reaction and obtain comments for improvement. According to U.S. EPA staff, the reaction to date has been very positive. The PBT Profiler undoubtedly will expand its applicability to additional chemical types, and has the potential to not only save industry money in the premarketing evaluation of new products but also to reduce the unintended introduction of PBT chemicals into the environment.

For additional information on the PBT Profiler, contact Dr. Ihab Farag, Chemical Engineering Department, University of New Hampshire, (603) 862-2313, e-mail: ihab.farag@unh.edu.

LEA Software

(Continued from Page 1)

Although many factors must be considered, the user initially reviews the financial implications of each alternative to identify the best approach for a site. LEA is designed to provide historic property managers faster, more consistent cost estimates. Caroline Hall, USAEC historian, explained the significance of user/manager input: "The manager's knowledge of the site's physical parameters is imperative — managers supply specific data for the facility and its environment."

The LEA then combines user-supplied data with a resource database of information that adjusts for geographical location, climate, inflation and industry-standard cost over a 20-year period. LEA summarizes the results in reports that can be printed or imported into other software programs. LEA provides not only cost estimates, but also information necessary to comply with NHPA regulations.

LEA was beta tested at three Army installations in real-time and direct-use applications. The National Park Service at Vancouver Barracks, Wash. used LEA to determine the level of government and private funding needed to renovate historic buildings and develop a plan to transfer land ownership to the National Historic Reserve — a partnership between the Army, the National Park Service and the city of Vancouver.

New housing proposals for the William Beaumont Historic District prompted Army managers at Fort Bliss, Texas, to use LEA cost estimates to analyze demolition and construction proposals.

At Fort Lincoln, N.D., most of the original buildings were transferred to the United Tribes of North Dakota. The two remaining buildings, under Army control, were analyzed for demolition using the LEA software.

In its short existence, the new LEA software tool has helped the Army's Cultural Resource program by assisting historic building decision makers determine the best course of action for handling excess historic facilities.

The Layaway Economic Analysis program, Version 2.04, is available for DENIX account holders at http://aec.army.mil. CD-ROM versions are available through the USAEC's Technical Information Center (TIC) at USAECTIC@aec.apgea.army.mil.

Savanna Army Depot Activity Officially Inactivated

By Hugh McAlear
Army Region V REC

In a flag-casing ceremony on March 9, 2000, MG Joseph W. Arbuckle, Commanding General of Operations Support Command, and Major Joseph A. Tirone, the last Commander of Savanna Army Depot Activity (SVADA), presided over the final official act to inactivate the installation. Officially, the installation became inactive on March 18, the end of the pay period for the remaining employees.

SVADA began operation in 1917 as the Savanna Proving Grounds. The initial mission was to test fire various artillery pieces. During the 1920s, the mission changed to include storage, receipt, issue, demilitarization, and renovation of ammunition.

The fate of the 13,062 acre installation was determined in 1995, when the Base Realignment and Closure Commission recommended closure and the relocation of its major tenant, The U.S. Army Defense Ammunition Center and School, to McAlester Army Ammunition Plant in Oklahoma. Since that time, the ammunition stocks have been slowly transferred to other storage sites, with the last ammunition leaving SVADA earlier this year.

Eventually the land will be transferred to the Local Reuse Authority (LRA) for follow-on civilian uses. Currently, parts of the installation that have been declared clean of contamination are leased by the LRA to potential transferees. Most of the former range area is slated to go to the U.S. Fish and Wildlife Service for a wildlife refuge. Prior to actual transfer, those areas contaminated by past use are being evaluated and cleaned up to risk free levels for the follow-on uses.

A small caretaker force will continue to maintain buildings and utility systems for up to a year, and will monitor security for the installation. The Base Environmental Coordinator Office will remain open indefinitely to oversee cleanup activities.

COL Lawrence J. Sowa, Director, U.S. Army Operations Support Command, Munitions and Armaments Center, Rock Island, IL, places the colors in the case held by CSM Lynnell Sullivan, Command Sergeant Major, U.S. Army Operations Support Command, Rock Island, IL. MAJ Joseph A. Tirone, the last Commander of Savanna Army Depot Activity, is behind CSM Sullivan.

For more information on the cleanup activities at Savanna Army Depot Activity, contact: John Clarke, Base Environmental Coordinator, (815) 273-8827.

Fort Sheridan Clears Surplus Property For Transfer

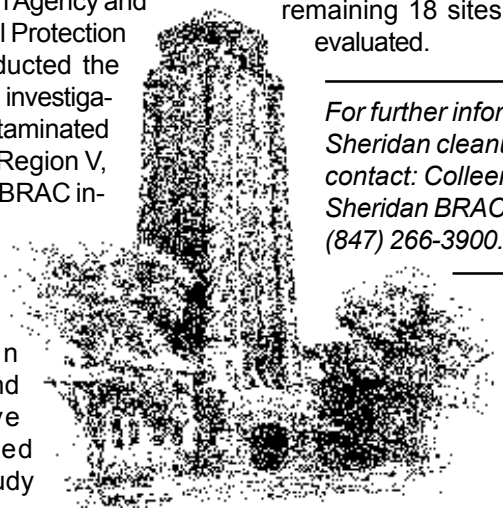
By Hugh McAlear
Army Region V REC

Fort Sheridan has achieved a major milestone in that all of its surplus property has been cleared for transfer to the neighboring Illinois cities of Highwood and Highland Park and the Lake County Forest Preserve District. The final parcel is a 1/2 acre lot located in the Historic District, where a cleanup was recently conducted to remove soil contaminated with PAHs from a former coal storage yard.

Fort Sheridan served as an active Army installation from 1887 through 1993, when the base was closed under the Base Realignment and Closure (BRAC) program. Fort Sheridan occupied 712 acres along the western shore of Lake Michigan, approximately 25 miles north of Chicago. Under BRAC, 206 acres were realigned to the U.S. Navy, and approximately 100 acres were earmarked for the U.S. Army Reserve. The remaining 406 acres were declared surplus, and have now been completely remediated and transferred to the successor civilian entities.

In coordination with the U.S. Environmental Protection Agency and the Illinois Environmental Protection Agency, the Army conducted the necessary environmental investigations and cleanup of contaminated sites. According to EPA Region V, Fort Sheridan is the first BRAC installation in Region V to achieve concurrence that all surplus property is suitable for transfer.

Work continues in evaluating the Navy and U.S. Army Reserve properties for required cleanup. Forty-four study areas initially were identified for evaluation. The Army has prepared a No Action Decision Document for 26 of the 44 sites, based on a determination that the 26 do not pose an unacceptable risk to current and potential future users and therefore do not require any cleanup. The remaining 18 sites are still being evaluated.



For further information on Fort Sheridan cleanup activities, contact: Colleen Reilly, Fort Sheridan BRAC Coordinator, (847) 266-3900.

AROUND THE STATES AND EPA REGIONS

[From Staff Reports]

NEW JERSEY/DoD VOLUNTARY CLEANUP AGREEMENT

The agreement, which now encompasses FUDS and BRAC sites, is nearing adoption. The joint New Jersey/DoD workgroup, comprising representatives from the New Jersey Department of Environmental Protection (NJDEP) and the DoD Services, met on March 28 at Aberdeen Proving Ground to continue working out details. Additional meetings are planned for April and May, with the agreement moving forward for signature in June.

NEW JERSEY/EPA/DoD ENVIRONMENTAL WORK GROUP AND P2 PARTNERSHIP GROUP

The Environmental Work Group and P2 Partnership Group met February 29, 2000, at NJDEP headquarters in Trenton. Topics covered in the Environmental Work Group morning session included upcoming EPCRA training, the NJDEP Phase II Storm Water Final Rule, electronic submittal of permits, the NJDEP International Environmental Technology Expo 2000, and updates on CERCLA restoration activities (New Jersey/DoD Voluntary Cleanup Agreement, summary of activities at NPL sites in New Jersey, and project scheduling requirements).

While the Environmental Work Group meeting was well attended, the afternoon P2 Partnership Group meeting was not. Due to the recent drop-off in DoD participation, and NJDEP's concern over the apparently low level of DoD installation interest in P2 assistance from the state, much of the P2 meeting was spent discussing future goals and objectives of the Partnership. The Service RECs were asked to work with their installations to identify successes and issues that could be shared with the group and exploited for the Partnership's benefit.

NEW YORK /DoD QUARTERLY WORK GROUP

The Quarterly Work Group met in the morning of January 19, 2000, at New York State Department of Environmental Conservation (NYSDEC) headquarters in Albany. Principal topics included the latest EPCRA requirements and related EPA training, initiation of an Emergency Response MOU between New York and DoD for munitions disposal, a Phase II stormwater update, and Phase II TMDL guidance. NYSDEC air media managers responded to installation questions and offered guidance on air emissions issues, including vehicle inspection and maintenance, purchase of NOx credits, and permits for dry cleaning operations.

NEW YORK P2 PARTNERSHIP AND ANNUAL CONFERENCE

The P2 Partnership met in the afternoon of January 19, following the morning Quarterly Work Group meeting. Since the signing of the Charter in August 1999, the Partnership has made little progress in defining its direction. Members agreed that the Service RECs will contact their installations in the state to determine the status of installation P2 programs, develop information on installation needs, and solicit suggestions as to the direction the Partnership should take. The next NYSDEC Annual P2 Conference is scheduled for September 19-21, 2000, and for the second consecutive year will include a DoD panel session. A call for nominations for the Governor's P2 awards will be issued soon.

REGION III EPA/DoD/STATE ENVIRONMENTAL COLLOQUIUM

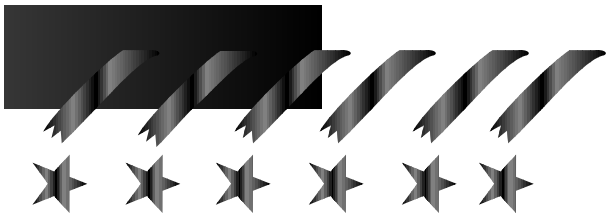
Planning between the Region III Service RECs and EPA Region III representatives continues for the next colloquium, which is scheduled for August 22-24, 2000, at the Omni Hotel in the Inner Harbor of Baltimore. Announcements of the colloquium and an agenda are scheduled to be issued in mid- to late-May. The theme of this year's colloquium is "Partnerships to a Better Environment." Social functions being planned include a luncheon, private reception at the National Aquarium, and dinner cruise in the Baltimore Inner Harbor.

DoD/ILLINOIS POLLUTION PREVENTION PARTNERSHIP

The Partnership is moving ahead on a Strategic Plan and Year 2000 goals. Adoption is expected at the April meeting. The training subcommittee has developed a training module, which potentially can be tailored for separate presentations to senior leadership, upper management and shop personnel. At the Partnership's meeting held at the Air National Guard Base in Peoria on January 26, members discussed options for jet turbine cleaning to reduce hazardous waste generation, and were briefed on the recently completed P2 opportunity assessment at the Army Reserve Maintenance Support Activity 48 in Bartonville.

DoD/INDIANA POLLUTION PREVENTION PARTNERSHIP

Work continues on development of the Partnership's web page on the Indiana Department of Environmental Management (IDEM) web site. When completed, the web page will be linked through DENIX to other DoD/state P2 partnerships. IDEM will be hosting the Great Lakes Regional Pollution Prevention Roundtable meeting in August, and has requested that DoD/Indiana P2 Partnership members play a prominent role as presenters. In other developments: · A press release has been drafted to announce the formal establishment of the Partnership once the charter has been signed. · A draft strategic plan has been developed, and is undergoing member review. · An awards program for the Partnership has been approved.



DoD/Michigan Pollution Prevention Alliance

The Charter format is complete, and copies of the Charter have been distributed to Alliance members. A public affairs release has been drafted to announce the "formalization of the Alliance." Good progress has been made by the Michigan DEQ in developing an Alliance web site. A strategic plan has been drafted, and is being reviewed by Alliance members. Once adopted, it will serve as the basis for annual Alliance workplans.

DoD/Ohio Pollution Prevention Partnership

Partnership members have approved a tri-fold brochure to market the P2 opportunity assessments performed by the Partnership. Members also have approved a general tri-fold brochure to communicate Partnership activities with local communities. The strategic plan has been adopted, and will serve as the tool to focus future efforts. The Partnership has approved a Certificate of Recognition for the Defense Supply Center, Columbus, Hazardous Materials Minimization Team for its efforts to evaluate alternatives to cadmium plating and to develop procedures to return gas cylinders to the manufacturer in lieu of disposal, thereby saving the government in excess of $1.2 million.

Wisconsin/DoD Pollution Prevention Alliance

At the Alliance meeting at Fort McCoy on February 8, 2000, the Wisconsin Department of Natural Resources made a presentation on waste paint disposal options, and the Defense Reutilization and Marketing Service Zone Manager briefed members on Defense Reutilization and Marketing Office services. In other news: • The Alliance Charter is now complete with member logos and signatures. • A strawman press release was distributed for optional use by the members to "officially announce" formation of the Wisconsin/DoD P2 Alliance. • Web site options are still being discussed. • Development of a Strategic Plan for the Alliance is now on the horizon.

For further information on these activities, contact:

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From the Chief

(Continued from page 2)

million in regulatory fines in fiscal 1998. Of the fines assessed against the Department of Defense, some 79 percent were assessed against the Army, and the Army has paid about 89 percent of the fines paid by DoD since fiscal 1994.

With the coming of spring, the Army has the opportunity to once again affirm its commitment to the environment. The Assistant Chief of Staff for Installation Management has issued the following Earth Day message for the year 2000:

"This April 22nd marks the 30th anniversary of Earth Day. Declaration of the first Earth Day was a milestone in our nation's commitment to environmental stewardship. The annual observance has provided an opportunity for Army installations to work in partnership with local communities and to hold suitable events and publicly demonstrate the Army's continued commitment to the environment.

"This year's Army Earth Day theme is 'Preserving the Past, Protecting the Future.' This theme is appropriate because it focuses on the progress the Army has made in managing the environment at our installations and in safeguarding our heritage.

"Our installations must maintain a healthy environment to be effective power projection platforms. Army lands must support tough, demanding training to serve as a solid foundation for the high degree of readiness that our mission demands. Beyond their value to the military mission, these lands enhance the quality of life for the soldiers and civilians who work, train and live there. Sound, professional stewardship of the natural and cultural resources on those lands is crucial to the success of our mission as we meet the challenges of the new millennium."

Spring is a time of renewal, and we all need to renew our dedication to supporting our DoD missions as well as maintaining a healthy environment.

RANGE XXI PROJECT UPDATE

[*From Staff Reports*]

The Range XXI program has undertaken a number of technology demonstrations and studies aimed at assuring that essential firing range activities can be continued within the framework of reduced risk to the environment and compliance with environmental regulatory requirements. This article summarizes some of the current Range XXI projects.

Demonstration of Shock-Absorbing Concrete (SACON) Bullet Traps

The SACON project, funded by the Environmental Security Technology Certification Program (ESTCP), was instituted to demonstrate and validate the performance of shock-absorbing concrete as a recyclable bullet trapping material in various range applications. Data collected at Fort Knox, the U.S. Military Academy, the Engineering Research and Development Center (ERDC), and Aberdeen Test Center (ATC) included ricochet and durability data, lead containment efficiency, maintenance and material handling data, personnel exposure data, and cost data. The tests showed that SACON can be used as an advanced range maintenance method to control the migration of lead from outdoor small arms ranges. However, due to SACON's expense and maintenance requirements, use of the material is recommended only for bullet trapping applications where lead migration cannot be controlled by other less expensive means. The final report is available on the Range XXI web site. Go to http://aec.army.mil and look under "Technology." The report also is available by contacting the USAEC Hotline at (800) USA-EVHL.

Demonstration of Commercially Available Bullet Traps

The purpose of this project was to demonstrate and validate the performance of selected commercially available bullet traps in a 25 meter zero range application. Data collected included durability data, lead containment efficiency, maintenance and material handling data, personnel exposure data, and cost data. Commercially available bullet traps are being considered for use as an advanced range maintenance method to control the migration of lead from outdoor small arms ranges. Little to no data exists to validate the performance claims made by manufacturers of their bullet trap's performance in outdoor range use scenarios. Testing of three bullet traps was completed by ATC in November 1998. Environmental and/or operational performance concerns unique to each trap tested were identified. Use of the traps on Army outdoor ranges is expected to be minimal due to performance limitations and cost. The use of a bullet trap is recommended only where control of lead migration cannot be maintained by less expensive means. A draft final report is expected in April 2000.

Characterization of Smoke and Pyrotechnic Emissions

This project is aimed at identifying and quantifying emissions from smoke and pyrotechnic items. Data generated as part of this effort will support the Army and Army Installations in assessing the environmental impact of smoke/pyrotechnics used as part of training and testing operations. Emissions data will serve as the basis for air dispersion models and fate and transport models, and ultimately to support generation of health and risk assessments. The report on Phase I testing for smoke and pyrotechnic emissions, involving 8 items tested in early 1998 at Dugway Proving Ground [DPG], has been reviewed without comment by the U.S. EPA Emissions Measurement Center, Air Inventory Group. To date, a total of 21 items have been tested at DPG. All data reports on the items tested to date are expected to be published in the summer of 2000. The Phase III draft report also is expected this summer. Phase IV testing is scheduled to begin in May 2000, involving an additional five smoke and pyrotechnic items.

Exploding Ordnance Emissions Study

The purpose of the exploding ordnance emissions study is to obtain data and identify models which will quantify emissions generated from the down range functioning of munitions containing explosives or other energetic fills. The focus of this Phase I effort is to document and assess existing data, identify applicable models, and develop test matrices and methodologies relative to characterizing emissions generated by representative Army munitions classes as they explosively function. ATC and DPG are the executing agencies for this effort. As with the smoke and pyrotechnics emissions study, data will be used in air dispersion and fate and transport models, and in support of health and risk assessments. The Phase I report is expected in late spring 2000, with testing of explosive ordnance at ATC and DPG scheduled to begin during the summer.

Firing Point Emissions Study

The firing point emissions study is being carried out to identify and quantify emissions generated by munitions at their firing position. As in the other studies, data generated from the study will be used in models and in support of environmental impact and health and risk assessments. The ATC is the executing agency. The initial program effort (to document and assess existing data, identify applicable models, and develop test matrices and methodologies relative to characterizing firing point emissions) culminated in the generation of the Final Report for the Firing Point Emissions Study in October 1998. Personnel from the U.S. EPA Emissions Measurement Center, Air Inventory Group, and Ms. Sherri W. Goodman, Deputy Under Secretary of Defense (Environmental Security), witnessed the testing of the 155mm in May 1999. Final reports on the 155mm and 40mm firings are expected in June 2000. The Detailed Test

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Plan (DTP) for the next 12 munitions to be fired was sent to the U.S. EPA in February 2000, and testing began in March. Results of these tests are expected in August 2000, with final reporting in October 2000.

Unexploded Ordnance (UXO) Degradation

The UXO degradation project is targeted at identifying if and/or what type of UXO degrades, obtaining data on the factors influencing the degradation of UXO, and assessing the impact degraded UXO has on the environment. Information gathered will serve as the basis for a preliminary corrosion model for UXO. The ATC is the executing agency. Phase II efforts will involve further real-world data collection to assist in the refinement of the Phase I model. Activities include viewing UXO clearance sites, assessing the UXO's condition after removal, and soil sampling. Currently, the Phase I model is at a 90% confidence level for a 30 – 50 year evaluation. The final report is expected to be available in early summer, 2000. The completed final draft of the computer model is now available for review and demonstration for determining the time to perforation of UXO. Additionally, under the UXO Degradation study, the Defense Ammunition Center has begun work on a Dud/Low Order Rate Study to determine the actual percentage of UXO fired. The Dud/Low Order Rate Study is scheduled to be completed by August 2000.

For further information on the SACON and bullet trap demonstration projects, contact:

Gene Fabian, USAEC, (410) 436-6847, DSN 584, e-mail: gene.fabian@aec.apgea.army.mil.

For further information on the Range XXI emissions and environmental studies, contact:

Tamera Clark-Rush, USAEC (WPI), (410) 436-6849, DSN 584, e-mail: tamera.clark@aec.apgea.army.mil.

Biodiesel Fuel

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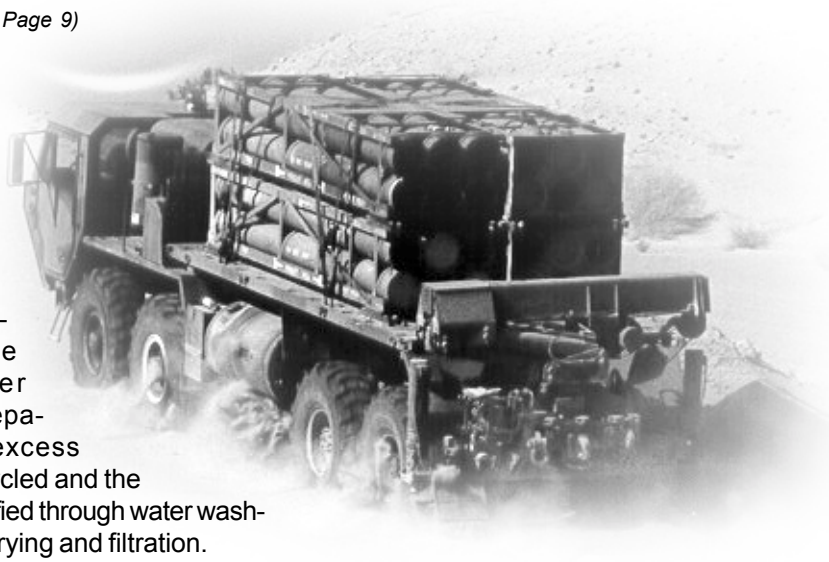

separated, making the removal of glycerol — a valuable industrial byproduct — possible. In the next recovery phase, the alcohol/ester mixture is separated. The excess alcohol is recycled and the esters are purified through water washing, vacuum drying and filtration.

Performance

Biodiesel fuels used in conventional diesel engines can result in considerable emission reductions of unburned hydrocarbons, carbon dioxide and particulate matter. Depending on the duty cycle of the engine, nitrogen oxides emissions are either slightly reduced or slightly increased.

Since biodiesel contains more oxygen than its petroleum diesel counterpart, it burns more efficiently. Biodiesel also eliminates sulfate emissions, since there is no sulfur in the fuel. The fuel works well with catalysts, particulate traps and exhaust gas recirculation systems.

Engine, ignition system or fuel injector modifications are not necessary. However, the solvent characteristics of biodiesel fuel may require the replacement of some hoses and fuel lines. Operators may want to have the engine fine-tuned for optimal performance. Use of biodiesel does not noticeably change the horsepower of the engine.

Pure biodiesel fuel is safer than petroleum, methanol or natural gas. The fuel has a high flash point, has very low toxicity if ingested and is biodegradable.

How Biodiesel Credits Work

According to Karl Weiss, Office of the Assistant Deputy Under Secretary of Defense (Environmental Security), allocation of one biodiesel fuel use credit requires the purchase and use of 450 gallons [or 'qualifying volume'] of biodiesel fuel in vehicles having a gross vehicle weight rating of more than 8,500 pounds. Therefore, "one biodiesel fuel use credit is equivalent to acquiring one alternative fueled vehicle," explained Weiss.

Weiss said the credits don't apply when the biodiesel is used in AFVs or when biodiesel is required by federal or state law.

Credits can be used to satisfy up to 50 percent of a fleet's alternative fueled vehicle requirements. "Since the cost for each alternative fuel vehicle credit ranges from $1,000 to $1,500, the savings can be significant when compared to the costs associated with purchasing some alternative fueled vehicles," said Weiss.

A Dec. 14 memorandum issued by Sherri W. Goodman, Deputy Under Secretary of Defense (Environmental Security), explains that "qualifying volume" is measured in gallons of B-100, which is comprised of 100 percent biodiesel.

Fleets can also take advantage of biodiesel fuel use credits by using B-20, a fuel containing 20 percent biodiesel and 80 percent petroleum diesel. If a fleet wished to qualify for the credit using B-100, it must purchase and use 450 gallons to receive one biodiesel fuel use credit. If a fleet wanted to qualify using B-20, it must purchase and use 2,250 gallons, since each gallon of B-20 contains one-fifth of a gallon of biodiesel.

Although biodiesel has not been

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Army of Partnerships Aids

[From USAEC Conservation Branch Materials]

Through memorandums of understanding and interagency agreements, the Conservation Branch of the U.S. Army Environmental Center (USAEC) has established formal partnerships with five federal agencies. Liaisons from the Bureau of Land Management (BLM), the Forest Service (FS), the Natural Resources Conservation Service (NRCS), the U.S. Fish and Wildlife Service (FWS), and the Advisory Council on Historic Preservation (ACHP) provide technical expertise and support in implementing the Army's natural and cultural resources management program. At the HQDA level, liaisons assist with policy development and guidance. At the installation level, liaisons provide technical expertise in integrated management plan development, survey work, technical materials, training, education, and other mission-related activities.

Partnering liaisons benefit the Army's environmental program in a variety of ways. Liaisons help foster better relationships among agencies and provide the Army access to resources and subject matter experts in a cost-effective manner. The Army's liaison program supports the Army Strategic Action Plan "Installation Vision 2010" by working to implement best business practices, maintain stewardship of assets, eliminate excess and maximize use of facilities.

Assistance to installations from the partnering agency liaisons comprises a range of activities in seven categories.

- Integrated Training Area Management
- National Environmental Policy Act
- Endangered Species
- Land Management
- Pest Management
- Cultural Resources Management
- Training, Education & Outreach

The Advisory Council on Historic Preservation

An independent federal agency, the council is the major policy advisor to the U.S. government on historic preservation. It provides a forum for influencing federal policy, programs, and decisions as they affect historic resources in communities and on public lands nationwide. The Council administers Section 106 of National Historic Preservation Act and reviews Army programs and policies to help balance needs for historic preservation with Army requirements. The Council also can provide Army personnel with essential training, guidance, and information to make the Section 106 review process more efficient.

For further information contact: Dave Berwick, Army Affairs Coordinator, (202) 606-8531, email: dberwick@achp.gov; or Karen Theimer, Council Liaison to the Army, (410) 436-1575, DSN 584, email: karen.theimer@aec.apgea.army.mil.

The Bureau of Land Management (BLM)

An agency of the U.S. Department of the Interior, BLM manages 264 million acres of public land — 12 percent of the nation's land area. BLM manages land, primarily in the West and Alaska, for recreation, mining, grazing, timber harvesting, and scenic and cultural values. BLM works in partnership with neighboring land managers. Its services include temporarily sharing personnel in many disciplines, training opportunities with satellite broadcast capability, and ecosystem management and planning. It also offers assistance from the BLM National Applied Resources Sciences Center, including photogrammetry (using aerial photographs for measurements), library services, and Geographic Information System -support.

For further information (as of May 1) contact: Kate Winthrop, archeologist, (410) 436-1573, DSN 584, email: kate.winthrop@aec.apgea.army.mil.

Dave Lorenz, NRCS Liaison and plant materials specialist, in Okinawa researching evidence of soil erosion associated with training areas.

The Natural Resources Conservation Service (NRCS)

An agency of the U.S. Department of Agriculture, NRCS has provided conservation planning assistance to private agricultural lands since 1933. The agency's specialists work in soils, reclamation, biology, engineering, range management, agronomy, water quality, and plant materials. Assistance to the Army includes ecosystem planning, soil surveys, erosion inventories, restoring damaged lands with plant materials, and reducing sediment.

For further information contact: David Lorenz, plant materials specialist, (410) 436-6844, DSN 584, e-mail: david.lorenz@aec.apgea.army.mil; George Teachman, soil scientist, (410) 436-1566, DSN 584, e-mail: george.teachman@aec.apgea.army.mil; and Angel Figueroa, conservation planner, (410) 436-1559, DSN 584, email: angel.figueroa@aec.apgea.army.mil.

The U.S. Fish and Wildlife Service (FWS)

A bureau within the Department of the Interior, FWS conserves, protects, and enhances fish and wildlife and their habitats. It provides technical assistance to the military under authority of the Sikes Act. Its major form of technical assistance is helping to develop and implement Integrated Natural Resources

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USAEC and Installations

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Management Plans and wetland inventories. FWS provides assistance also with respect to migratory birds, endangered species, certain marine mammals, freshwater and anadromous fish, national wildlife refuges, habitat conservation, environmental contaminants, and training opportunities for natural resource managers.

For further information contact:
John Bardwell, biologist, (410) 436-1598, DSN 584, e-mail:
john.bardwell@aec.apgea.army.mil.

The U.S. Forest Service (USFS)

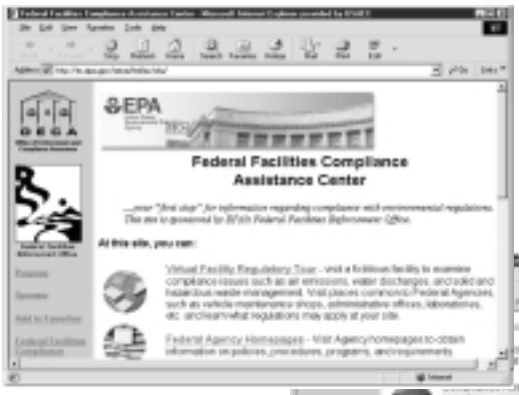
An agency of the Department of Agriculture, USFS conserves the national forests and grasslands and assists with stewardship of forests that other federal agencies, states, and private landowners manage. Some national forests provide key mission lands to the Army. Through an interagency agreement, the USFS helps the Army to comply with the National Environmental Policy Act and with preparing Integrated Natural Resources Management Plans. USFS also helps to design and carry out programs and projects for wildlife and fish, threatened and endangered species, outdoor recreation, noxious weeds, timber management, urban forestry, forest health and stewardship, fire ecology and fuels management, and tropical forestry.

Mark Cleveland (far left), Forest Service Liaison, providing assistance for wetlands delineation at Curtis Bay, MD Defense Logistics Agency site.

For further information contact:
Mark Cleveland, liaison,
(410) 436-1589, DSN 584, e-mail:
mark.cleveland@aec.apgea.army.mil; or
Helene Cleveland, forester,
(410) 436-1558, DSN 584, e-mail:
helene.cleveland@aec.apgea.army.mil.

• U.S. EPA Opens Federal Agency Compliance Assistance Center on the Web •

[From U.S. EPA Region II Announcement]



The U.S. Environmental Protection Agency (EPA) has opened the Internet-based Federal Facilities Compliance Assistance Center to provide federal government agencies with information on environmental regulations, guidance on compliance assistance, and links to state and other federal agency environmental home pages. The center is sponsored by the Federal Facilities Enforcement Office, which is responsible for ensuring that federal facilities take actions necessary to prevent, control and abate environmental pollution. The office also develops policies and guidance for federal agencies, helps negotiate interagency agreements, provides technical assistance and provides program, enforcement and information support to EPA's regional offices. The new center address is http://www.epa.gov/oeca/fedfac/cfa/. All of EPA's compliance assistance centers can be reached at http://www.assistancecenters.net/.

U.S. Geological Survey – Science For A Changing World – Why Should You Care?

by William J. Herb
USGS Liaison to the Army Environmental Center

The U.S. Geological Survey (USGS) recently changed its slogan from "Earth Science in the Public Service" to "Science for a Changing World." So what? Why should someone in the front lines of environmental issues at an installation care that a relatively obscure agency in the Department of the Interior changed its slogan?

Well, I can think of at least two reasons. The first, and most important, reason is that the USGS just might be able to help you to understand some of your environmental issues well enough for you to develop solutions, and the second reason is that the USGS is undergoing changes that will make it even more useful to you. Change is never easy, especially for a bureau that just celebrated its 120th birthday in a department that recently celebrated its 150th birthday. I know that makes USGS a toddler in relation to the Army, but you "old-timers" can really appreciate how tough change can be!

The USGS recently added a bouncing, new 170-ton (1,950 personnel) Biological Resources Division to its family of long-established divisions: Geologic, Mapping and Water. The addition of this new Division made the "earth science" part of the old slogan obsolete, and the ever-changing face of the traditional earth sciences dictated that the agency's approach change with the times. In the almost 6 years that I have been in my liaison position here at the Army Environmental Center, the USGS has undergone numerous changes to make it more internally consistent and more "user friendly."

You might think that an agency combining geology, maps, hydrology and biology under a single operating philosophy would resemble a horse designed by a committee (probably looks like a camel). However, all four divisions are united by a single goal: providing relevant, impartial scientific information about the natural sciences and support systems for these sciences.

Instead of operating in the "stovepipes" of the three traditional divisions and the new, fourth division, the re-engineered USGS integrates physical and biological research into four crosscutting themes—natural hazards, natural resources, environment, and information management. This integrated approach builds strong multidisciplinary teams of scientists focused on applied research and results that people (and installations) can use.

Brown Tree Snake

To help reduce the toll exacted by natural hazards, the USGS maintains a number of research and monitoring programs across the United States. A network of more than 7,000 stream-gaging stations, more than 2,500 of which are linked by satellite communications to the World Wide Web, provides data, including some near real-time data on floods and droughts. Three volcano observatories assess dangers from active volcanoes in Alaska, Hawaii and the Cascades Range in Washington, Oregon and northern California. In cooperation with the aviation industry, USGS continually monitors volcanoes in the Aleutian Island chain to reduce the risk to airplanes from volcanic ash clouds. The National Earthquake Information Center works with partners at state and regional levels and around the world to monitor earthquake activity. Through cooperative efforts with engineers and urban planners, the USGS is working to reduce the human and economic losses from potential earthquakes in the conterminous United States and Alaska. USGS scientists are studying emerging diseases such as cryptosporidium, the West Nile virus and Valley Fever to understand wildlife diseases and their effects on human health.

USGS studies of water supplies, minerals and energy deposits, and our Nation's wealth of plants and animals provide essential information to managers, regulators, industry,

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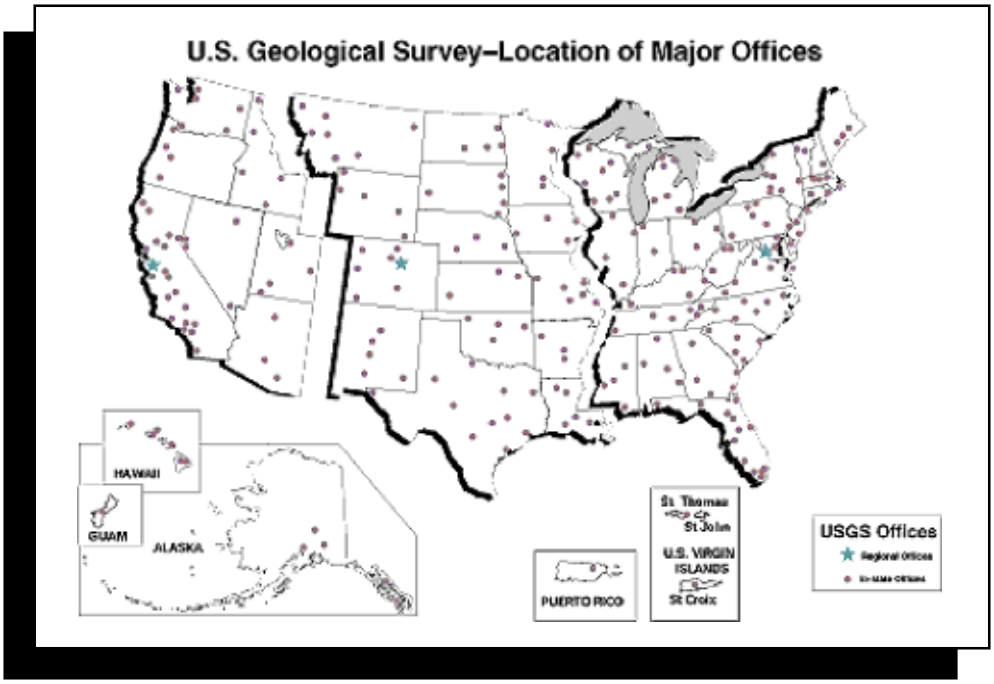

USGS
science for a changing world

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and the public for sound decisions on our unique resource heritage. On average, each citizen uses about 78 gallons of water at home each day. Through the National Water Quality Assessment Program, USGS scientists track the quality of our surface- and ground-water resources in major watersheds across the country. USGS scientists monitor trends and statistics for more than 600 mineral commodities, and develop national, regional, and local assessments to determine amounts and quantity of mineral and energy resources. In cooperation with states, universities, and local groups, USGS scientists are monitoring the health of America's biological resources from polar bears in Alaska to manatees in Florida.

Our safety and health depend on the environment in which we live. USGS geologists, biologists, hydrologists, cartographers, and others are working with federal land managers to remediate contamination associated with the more than 500,000 abandoned mines that dot the landscape of the United States. The USGS is studying such invasive plants and animals as brown tree snakes, leafy spurge, and zebra mussels to determine the best ways of controlling their spread, and to mitigate the billions of dollars in damage and destruction of native species. USGS studies in coastal estuaries such as San Francisco Bay and Chesapeake Bay are helping to explain how the Nation's coastal ecosystems respond to natural sources of change, such as floods and hurricanes, as well as to human influences.

An essential part of the USGS mission is making sure that the results of its scientific studies are available to those who need the information. The USGS home page on the World Wide Web provides access to more than 100,000 pages of information. More than 150,000 people visit the USGS web site each month. At the USGS EROS Data Center in South Dakota, more than 12 million aerial photographs and satellite images are archived and available for sale. USGS topographic maps have provided an accurate foundation for planning and decisionmaking for the past 100 years, and today geospatial information is available in geographic information systems and a wide variety of mapping products [or check out the striking online satellite imagery available on the TerraServer].

USGS Digital Raster Graphics (DRGs), colored topographic maps that have been scanned into the computer, help resource managers, planners, and emergency personnel make decisions quickly and with confidence. You can even develop your own maps online using information collected for the National Atlas.

So what? Why should you care what the USGS can do? In addition to the publicly available information described above, we've been providing technical support from our nationwide network of offices to local, State and Federal agencies (including DoD) for a good part of our 120 years.

As part of its Department of Defense Environmental Conservation (DODEC) Program, USGS has two hydrologists on loan (including me) to the Army and Air Force, respectively. Additionally, the USGS has designated specific Points of Contact for the Army Environmental Center, Air Force Aeronautical Systems Command, Air Force Reserve Command, Army Training and Doctrine Command, Army Reserve Command (stormwater issues), Army Forces Command, Army Materiel Command, Army National Guard, Army Industrial Operations Command, Navy Northern Division, Navy Southern Division, Navy Engineering Field Activity Northwest, and the Navy Engineering Field Activity Chesapeake. The USGS has Memorandums of Understanding (MOUs) with these service entities as well as with the Deputy Under Secretary of Defense (Environmental Security). Additionally, many individual installations have MOUs with local USGS offices. Such installations include, but are not limited to, Aberdeen Proving Ground, Hill Air Force Base, Missouri Army National Guard, Fort Lewis and Dugway Proving Grounds.

Each year, the DODEC program hosts an annual conference, open to all DoD participants, that utilizes both DoD and USGS speakers to articulate the needs of DoD and to highlight the capabilities and accomplishments of the USGS across a broad range of environmental issues in military and related settings. It's a great opportunity to contact individuals who bring a wide range of innovative science to the table, and the format of the conference is designed to foster just such one-on-one interactions. Previous meetings were held in such places as Las Vegas, Colorado Springs, Charleston, Miami, and Tacoma; the 2000 meeting will be held in San Diego, California, from May 1-5.

The USGS is a resource that is available to all DoD components. It can provide high-quality, unbiased scientific analyses that are generally accepted by other scientists, regulators, and the general public. It can be a valuable arrow in your quiver of environmental management tools.

If the U.S. Geological Survey may be able to assist to you in a specific situation, please contact Mr. Herb at the U.S. Army Environmental Center (410) 436-7096, DSN 584, william.herb@aec.apgea.army.mil, and he will connect you with an appropriate point of contact.

Ed. Note: *The* Monitor *is accessible electronically on the NREO web page of the USAEC web site at http://aec.army.mil. In that format, underscored texts are hyperlinks which can connect you directly with the information source.*

Biodiesel Fuel (Continued from page 9)

approved for use in tactical vehicles, biodiesel fuel use credits can be used in most administrative (commercial) vehicles to meet a portion of DoD's alternative fuel vehicle acquisition requirements under EPACT.

The memorandum provides fleet managers with guidance and additional sources of compliance and technical information such as web sites and points of contact (see below).

Regulations concerning biodiesel fuel use credits have been promulgated under the Department of Energy's 19 May 1999 interim final rule (64 FR 27169) *Alternative Fuel Transportation Program; Biodiesel Fuel Use Credit*.

For more information

- ***DUSDES memo on biodiesel fuel credits:*** *http://www.denix.osd.mil/denix/Public/ES-Programs/Pollution/Biodiesel/biodiesel.html*
- ***Executive Order 13031*** *— Federal Alternative Fueled Vehicle Leadership: http://policyworks.gov/org/main/mt/homepage/mtv/eo13031.htm*
- ***Dave Fuchs,*** *Office of the Deputy Chief of Staff for Logistics (ODCSLOG), (703) 614-4060, e-mail: david.fuchs@hqda.army.mil.*
- ***Karl Weiss,*** *Office of the Assistant Deputy Under Secretary of Defense for Environmental Security (ADUSD(ES)), (703) 604-1846, e-mail: weisska@acq.osd.mil.*

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